

BRADKA, J.

BRADKA, J. Soviet research work in the central Arctic zone. p. 841.

Vol. 5, no. 6, 1955.

SOVETSKA VEDA: MATEMATIKA-FYSIKA-ASTRONOMIE

SCIENCE

Praha, Czechoslovakia

So: East European Accessions, Vol. 5, no. 5, May 1956

BRADKA, J.

"Dependency of precipitations and cloudiness on advection and 'isohypses'."

p. 145 (Meteorologické Zpravy, Vol. 10, no. 6, Dec. 1957,
Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) IC, Vol. 7, no. 9,
September 1958

BRADKA, J

SURNAMES (in caps); Given Names

Country: Czechoslovakia

Academic Degrees: [not given]

Affiliation: HNU [Presumed: Hydrometeorological Institute (Hydrometeorologický
ustav)]

Source: Prague, Meteorologické Zprávy, Vol XIV, No 3, 30 June 1961,
pp 58-61

Data: "Passages of Fronts at Prague."

BRADKA, J.

Maps of cyclone areas and evaluation of weather forecast maps.
Meteor zpravy 15 no.3/4:101-104 Ag '62.

1. Hydrometeorologicky ustav.

BRADKA, Jiri, promovany chemik

Examination of the amount of sediment in the Vranov Dam Reservoir.
Vodni hosp 13 no.6:214 '63.

BRADKA, J.

*Distribution of the frequency of wind direction and wind speed
over Vienna up to the 30 km, height* by F. Steinhauser, K. Cehak.
Reviewed by J. Bradka. Meteor zpravy 16 no.1:23 F '63.

BRADKA, J.

The precipitation shadow on the lee of the Erzgebirge Mountains.
Meteor zpravy 16 no.2:26-28 Ap '63.

1. Hydrometeorologický ústav.

BRADKA, J.; SMOKIK, Zd.

Thunderstorms on the territory of Bohemia and Moravia in different synoptic situations. Meteor zpravy 17 no. 3, 93-95 Je '64.

1. Hydrometeorological Institute, Prague.

L 31483-66 FCC GW

ACC NR: AP6023107

SOURCE CODE: CZ/0085/65/000/006/0170/0173

AUTHOR: Bradka, Jan

ORG: HMJ, Prague

TITLE: Singularities in the circulation and their application in weather forecasting

SOURCE: Meteorologické zpravy, no. 6, 1965, 170-173

TOPIC TAGS: weather forecasting, atmospheric circulation

ABSTRACT: Daily occurrences of circulation macrotypes W-westerly, E-easterly, C-meridional types are discussed. Period 1901 - 1960 is discussed; only a few singularities could be found. The most striking feature is the high frequency of the C type circulation at the end of May, and of the W type at the beginning of June. There is a regular strengthening of the zonal circulation in the second half of March, and in the middle of May. The total period of 6 years is divided into 6 ten-year periods and a comparison between the six is made. A conclusion is made that the singularities cannot be used for successful weather forecasting. Orig. art. has: 6 figures and 1 table. [Based on author's Eng. abst.] [JPRS]

SUB CODE: 04 / SUBM DATE: none

Cord 1/1 mc

BRADKA, J., promovany chemik; REHACKOVA, V., dr. CSc.

Mass destruction of fish in the Slapy Reservoir in the
1962/63 winter. Vodni hosp 14 no.12:451-452 '64.

1. Research Institute of Water Resources Management, Prague.

BRADLE, V.A.; MORSHCHNIKOV, V.D., red.

[For trade-union activist workers about the innovators of
agricultural production] Profaktivu - o novatorakh sel'sko-
khoziaistvennogo proizvodstva. Moskva, Profizdat, 1964.
67 p. (Bibliotekha sel'skogo profsoiuznogo aktivista,
no.1(25)) (MIRA 17:11)

VENCovsky, E.; BRADLEIOVA, M.

Therapy of mental disorders in children and glutamic acid. Prakt. lek.,
Praha 33 no.2:38-39 20 Jan 1953. (CML 24:3)

1. Of the Psychiatric Clinic (Head--E. Vencovsky, M. D.), Pilsen.

EKARDT, K. [Eckardt, K.]; TRUM, Kh.; BRADLER, G.; FYUGNER, R. [Fugner, R.]

Griseorhodins, a new group of actinomycete dyes acting as antibiotics. Antibiotiki 10 no.7:603-612 J1 '65.

(MIRA 18:9)

1. Institut mikrobiologii i eksperimental'noy terapii Yyena, Nemetskaya akademiya nauk, Berlin.

BRADLER, V.

Electric welding in naval construction. p. 63.

METALURGIA SI CONSTRUCTIA DE MASINI

Vol. 8, no. 1, Jan. 1956

Rumania

Source: EAST EUROPEAN LISTS Vol. 5, no. 10 Oct. 1956

BRADLER, V., ing.

Fluvial passenger ship "NR-Oltenita". Rev transport 8 no.12:535-537
D '61.

(Rumania—Inland navigation) (Ships)

BRADLER, Victor, ing.

The 1,100 h.p. tugboat. Rev transport 10 no.2:82-85 P. '63.

HASU, Eugen, ing.; BRADLER, Victor, ing.

The Dobrogea and Bucuresti cargo boats of 10630/12860
d.w.t. Rev transport 11 no.10:468-471 0 '64.

NOVAK, E.; HLAVOVA, V. Techn. spoluprace: BRADLEROVA, J.; SKALOVA, Z. PELCOVA, V.

Experiences with balneological therapy of foreign patients
in Karlovy Vary. Fysiat. vestn. 43 no.3:138-143 Je'65.

1. Ceskoslovenske lczne, Lazenska sanatoria Imperial, Karlovy
Vary (reditel: MUDr. J. Hanyecz).

Z/013/61/000/006/001/001
D006/D102

AUTHOR: Bradna, Jan, Engineer

TITLE: A contribution to the problem of suitability of talc minerals for production of steatite ceramics

PERIODICAL: Sklář a keramik, no. 6, 1961, 161-163

TEXT: The paper describes various talc types used in the ČSSR for steatitic production and evaluates their suitability and green forming properties. At present, talc from a location near Hnúšťa in East Slovakia and Manchurian talc are used. One Czechoslovak plant still uses talc from Göpfersgrün, West Germany. Until several years ago, talc from the Egyptian Hamata deposit was also extensively used. The Hnúšťa talc is of white to greenish color with distinct foliation and of varying quality and chemical composition. It frequently contains macroscopic cubic pyrite crystals which must be manually picked out. Its green forming properties are somewhat better than those of the Manchurian talc. It is sorted into several quality grades according to the content of admixtures (chiefly

Card 1/3

Z/013/61/000/006/001/001
D006/D102

A contribution to the problem...

chlorite). The two purest grades are trademarked EK I and EK II, respectively, of which EK I is used for low-dielectric-loss, and EK II for ordinary steatitic production. The Manchurian talc from the Shantung peninsula is of high purity and uniform quality and pyrite and limonite contents are lower than in the Hnúšťa talc. It has a macroscopic flaky structure similar to that of Hnúšťa talc, but its slate-like cleavage and foliation are much less developed. Manchurian lump talc is typically pink with glassy to talcous luster. The Göpfersgrün talc has excellent green forming properties due to the fact that its flaky structure is least developed of all known talc types. The flaky structure of the Slovak and Manchurian talcs is unfavorable and must either be broken up or its effect reduced. The latter is accomplished by proper blending of several talc types, the former either by calcination at 1,300°C or by colloidal milling. Calcination disrupts the crystal lattice, but the talc is converted into enstatite, whereby its technological properties are changed causing an increased wear on pressing and extruding dies and a lower plasticity of the raw mass. The colloidal-milling

Card 2/3

A contribution to the problem...

Z/013/61/000/006/001/001
D006/D102

method, as improved by Doctor J. Mazanec of the VÚEK Hradec Králové (Ref. 4: Příspěvek k zlepšení fyzikálních a technologických vlastností steatitových hmot z domácích surovin [A contribution towards improving the physical and technological properties of steatite products of domestic raw materials], Silikáty, III, 1959) provides better results in both green and burned states. Colloidal milling reduces the flake size to about 5 microns whereby the technological properties, especially of green forming, are considerably improved. This method was already practically applied to the Slovak (EK I), Manchurian, and Egyptian (Hamata) talcs. Blending of various talc types has recently become virtually impossible due to the difficulties of obtaining fine-grained talc from western countries. Previously, the fine-grained (pseudoamorphous) talc from Göpfersgrün was used in blends with the Slovak and Manchurian, and Slovak and Egyptian talcs, respectively. There are 5 figures, 2 tables and 10 references: 9 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Výzkumný ústav elektrotechnické keramiky, Hradec Králové (Research Institute of Electroceramics, Hradec Králové). ✓

Card 3/3

BRADNA, Jan. inz.

~~Vacuum-tight forsterite and its technology. Sklar a keramik 14~~
[i.e. 15] no.1:10-11 Ja '65.

1. Research Institute of Electrotechnical Ceramics, Hradec Kralove.

BRADNA, J.

The significance of changes in the muscle tonus and elasticity in the development of spinal deformities in poliomyelitis. Cas.lek.cesk 100 no.42:1317-1323 20 0 '61.

1. UNZ Marianske Lazne.

(POLIOMYELITIS diag)

L 12271-63

S/271/63/000/004/014/045

44

AUTHOR: Bradna, Jiri

TITLE: A pickup of dynamic and static component oscillations

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemekhanika i vychislitel'naya tekhnika, no. 4, 1963, 17, abstract 4A109 (Czechosl. pat., kl. 30a, 4/06, 42c, 42, no. 101474, 15.11.61)

TEXT: The proposed pickup is intended mainly for biological research. The construction is distinguished by the fact that the control rod is rigidly bound with a carbon displacement pickup and with an electromagnetic or electrodynamic velocity pickup. A surface electrode for recording bioelectric potential is fastened on the rod itself. A differentiating or integrating device is joined with the electromagnetic or electrodynamic pickups. There is one illustration. M. Ts.

[Abstracter's note: Complete translation]

Card 1/1

L 40568-65 EWP(e)/EPA(s)-2/EWT(m)/EWP(r)/EPF(n)-2/EPA(w)-2/EWP(t)/EWP(b)

Pab-10/Pt-10/Pu-4 WB/JD

ACCESSION NR: AP5002993

Z/0013/65/000/001/0010/0011

AUTHOR: Bradna, J. (Engineer)

TITLE: Vacuum-tight forsterite and its technology

SOURCE: Sklar a ke smik, no. 1, 1965, 10-11

TOPIC TAGS: forsterite, forsterite processing, forsterite ceramic, vacuum proof forsterite, magnesite, vacuum tube manufacture, sintered forsterite

ABSTRACT: Forsterite has been used for some 10 years instead of glass for the manufacture of vacuum tubes in the SSSR, the USA, East and West Germany and Switzerland. Two types of forsterite ceramic have been developed in Czechoslovakia for use in vacuum techniques and high-frequency electronics. The materials employed are ground raw talc, raw magnesite crushed to 1-mm grains, kaolin, and barium carbonate. These are mixed in proportions to produce sintered fragments containing only Mg_2SiO_4 or forsterite in the crystal phase. This compound produces a mass which can be worked like steallite or steatite, and when ground can be filter-pressed by the usual methods. Its pH is 6.5 or 7 and no acid or other additive is required. Talc and magnesite are the chief elements in the crystal phase: kaolin and barium carbonate produce the glass phase. All these components

Card 1/2

L 40568-65

AGGESSIGN NR: AP5002993

are found in Czechoslovakia, but the domestic magnesite found in large quantities between Lucenec and Kosice in Slovakia is too high in Fe_2O_3 (or FeO). After experiments with synthetic MgCO_3 , MgO and $\text{Mg}(\text{HO})_2$ these were abandoned as too expensive and too variable in chemical composition, and they produced hard magnesium hydrates. For high vacuum-proof forsterite, as required for vacuum tubes, the powder must be sintered at 1300C, crushed, wet ground, and then dried and wet with a polyvinyl alcohol solution before being pressed into the required shapes. Sintering at 1300C "kills" the substance, reduces porosity and raises volumetric weight through compression by a linear 14%. The physical and electrical properties of both types of forsterite are given in Table I of the Enclosure. The experimental type F 011-1P6 has an optimal burnout temperature of 1360-1370C, while the industrial type F 011-2P8 burns out at 1300-1310C. Orig. art. has: 1 table and 1 figure.

ASSOCIATION: Vyzkumny ustav elektrotechnicke keramiky, Hradec Kralove (Electrical ceramics research institute)

SUBMITTED: 00

ENCL: 01

SUB CODE: MT

NO REF SOV: 000

OTHER: 016

2/3

Card

BRADNA, J.Z.
(Article 1946)

nuerologicke klin. v Hradci Kralove. Z lecebneho ustavu Janske Lazne. Uloha Priscolu pri lece nasledku detaske obrny 2-Benzylimidazoline (priscol) in the treatment of poliomyelitis Cas. Lek. ces. 1951, 90/41 (1212-1216) Graphs 3.

The above-named drug has a very favourable effect of the peripheral circulation, in virtue of its vasodilator action. It can be administered orally, i.v. or i.m. The local skin temperature can be raised more than 8° C. by its administration. Not only the temperature but also the daily oscillations can be increased and improvement or abolition of muscular spasm can be effected, even as long as 2 yr. after onset of the disease.

Prochazka - Prague (XX, 8)

Source: EXCERPTA MEDICA Vol. 5 No. 5 Section VIII May 1952

BRADOS, Ye. M.

AFANAS'YEV, D.Ya.; BILYK, G.I.; BRADOS, Ye.M.; GRIN', F.A.

Classification of the vegetation of the Ukrainian S.S.R. Ukr.
bot.zhur. 13 no.4:63-82 '56. (MLRA 10:1)
(Ukraine--Botany--Classification)

BRADOSCHE, P.

The problem of using standards for plans of forest roads.

p. 594 (Revista Padurilor) Vol. 71, no. 9, Sept. 1957, Bucuresti, Rumania

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7, NO. 1, JAN. 1958

BRADSKAYA, I. A., and MERKULOVA, I. P.

"Concerning Delayed Changes of the Brain After X-Ray Irradiation," by I. A. Bradskaya and I. P. Merkulova, Division of Pathomorphology (head, Prof B. S. Khominskiy) and Division of Roentgenology (head, Prof Ya. I. Geynisman), Scientific Research Institute of Neurosurgery, Ministry of Health Ukrainian SSR (director, Prof A. I. Arutyunov, Honored Worker of Science, Vestnik Rentgenologii i Radiologii, Vol 31, No 2, Mar/Apr 56, pp 7-13

The purpose of this research was to study the delayed morphological changes occurring under the action of fractional doses of X rays on the brain.

Tests were run on seven dogs which were subjected to two courses of irradiation with a 5- to 5 1/2-month interval between courses and a total dose of 5,400-12,200 r.

Photomicrographs of cortical tissue 11-14 months after irradiation show delayed changes arising after protracted fractional irradiation by massive X-ray doses. Morphologically, they appear in the form of injuries of blood vessels, nerve filaments, cells, and glia and have a definite relationship to the dose and time after irradiation.

Sum 1258

NESTEROV, I.I.; PEROZIO, G.N.; BRADUCHAN, Yu.V.; STAVITSKIY, B.P.; NESTEROVA, Ye.I.; MITROFANOVA, G.M., ~~vedushchiy red.~~

[Surgut keywell. Tymen' Province.] Surgutskaya opornaya skvazhina (Tiumenskaia oblast'). Leningrad Nedra, 1964. 187 p. (Leningrad. Vsesoiuznyi neftianoi nauchno-issledovatel'skii geologorazvedochnyi institut. Trudy, no.226)

BRADUL-KIRILLOV, B.G., aspirant

"Design of an infinite composite beam on an elastic foundation."
Nauch.trudy KHIIT no.58:97-108 '62. (MIRA 16:12)

BRADVAREVIC, M.

Draft of regulations and methods for testing radio receivers for the reception of amplitude-modulated signals. p. 1093

TEHNIKA, Vol 10, No. 8, 1955

Beograd

SO: EEAL, Vol 5, No. 7, July 1956

BRADVAROV, A.; STOEV, S.; MLADZHOV, L.

BRADVAROV, A.; STOEV, S.; MLADZHOV, L. Casting in shell forms. P. 29.

Vol. 5, no. 10, 1956
TEZHKA PROMISHLENOST
TECHNOLOGY
Sofia, Bulgaria

So: East European Accession, Vol. 6, no. 3, Mar. 1957

BRADVAROV, A.

Characteristics of Bulgarian molding sand.

P. 16, (Tezhka Promishlenost) Vol. 6, no. 3, Mar. 1957, Sofia, Bulgaria

SO: Monthly Index of East European Acessions (EEAI) Vol. 6, No. 11 November 1957

BRADVAROV, A.

Molding clay from the deposits near the village of Zhabliano and from the Kachitsa mine.

P. 29, (Teshka Promishienost) Vol. 6, no. 4, Apr. 1957, Sofia, Bulgaria

SO: Monthly Index of East European Acessions (EEAI) Vol. 6, No. 11 November 1957

COUNTRY : BULGARIA H
CATEGORY : Chemical Technology. Chemical Products and Their
Applications. Ceramics. Glass. Binding Materials.*
ABS. JOUR. : RZhKhim., No 19, 1959, No. 68586
AUTHOR : Brodvarov, A.: Veleva, K.
INSTITUTE : -
TITLE : Application of Soluble Glass as Binder in the
Steel Mills
ORIG. PUB. : Tezhka promishlenost, 1958, 7, No 2, 15-21

ABSTRACT : No abstract.

Card: *Concrete.
 1/1

H - 34

BRADVAROV, A1.

New binders for core mixtures in foundry work. Mashinostroene
10 no.11:19-23 '61.

1. Nachalnik na Tsentralna zavodska laboratorii pri Durzhavniia
metalurgichen zavod, Kolarovgrad.

BRADVAROV, Al.

Electrochemical cleaning of metal castings and forged articles
in the Kolarovgrad State Machine Building Factory. Mashinostroyeniye
11 no. 11: 7-11 N '62.

ANDONOV, P.; TEOKHAROVA, M.; BRADVAROVA, I.; KARACHOLEV, I.; SHUMKOV, G.;
STOYANOV, N.

Study of the etiology of infectious hepatitis. Vop.med.virus.
no.9:16-23 '64. (MIRA 18:4)

BRADYOVA, N; FRIEDLANDROVA, B.

Exercise in pregnancy and puerperium. Prakt. lek., Praha
32 no.4:84-89; contd. 20 Feb 1952, (CLML 22:2)

1. Of the Institute for the Care of Mother and Child (Head--
Prof. J. Trapl, M. D.), Prague-Podole.

IONESCU, N., prof. (Bucuresti); BRAEDT, A., prof. (Bucuresti)

Itineraries for the school excursions in the southeastern part of the country. Natura Geografie 14 no.4:49-57 Jl-Ag '62.

BRAEDT, A., prof. (Bucuresti); VOLLRATH, H., prof. (Bucuresti)

Cinematography in teaching geography. Natura Geografie 13 no. 5:
50-53 S-O '61.

PETRESCU, V.; BRAESCU, Ecat.; SAVIN, Gh.; COMAROVSKI, Gh.

Study on the influence of the treatment of domestic maize with
X rays; germination, growth of plants, and crops. Studii fiz tehn
Iasi 10 no.2:251-268 '59. (EEAI 9:9)
(Rumania--Corn (Maize))

BRAESTER, O.

Consolidation of work on railroads.

P. 163 (REVISTA CAILOR FARATE) (Bucuresti, Rumania) Vol. 5, no. 9, Sept. 1957

SO: Monthly Index of East European Accessions (IEAI) LC Vol. 7, No. 5. 1958

BRAESTER, O.

Stability of embankments. p. 6.

REVISTA CAILOR EERATE. (Cailc Ferate Romine) Bucuresti, Rumani; Vol. 7, no. 1,
Jan. 1959.

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 9, ^{Sept.}/1959

Uncl.

BRAESTER-MARCU D.

RUMANIA/Chemical Technology - Chemical Products and Their
Applications - Drugs, Vitamins, Antibiotics.

H.

Abs Jour : Ref Zhur - Khimiya, No 11, 1958, 37217

Author : Varcovici, H., Braester-Marcu, D.

Inst : -

Title : Presence of Temperature Raising Substances in Injection
Solutions.

Orig Pub : Farmacia (Romin.), 1957, 5, No 2, 130-136

Abstract : The significance of presence of pyrogenic substances
in injection solutions is considered. Prescriptions
for the preparation of sterilized, non-pyrogenous
solutions are given.

Card 1/1

4/3

Braester-Marcu, Dora

2

SAYOR L. R.
SURNAME (in caps); Given Names

Country: Rumania

Academic Degree: Pharmacist

Affiliation: ---

Source: Bucharest, Farmania, No 6, 1961, pp 357-365.

Data: "The Use of Gynopphylla paniculata L. (Saponaria Alba)
Root or of Pure Saponin Extracted from this Root instead
of Primula Root."

Co-authors:

BRAESTER-MARCU, Dora, Pharmacist.
IONAT, V., Pharmacist.

BRAEZINSKI, Z.

An LE-4 type electronic radiation counter. p. 96

NUKLEONIKA. (Polska Akademia Nauk. Komitet do Spraw Pokojowego Wykorzystania
Energii Jadrowej) Warszawa, Vol, 5, no. 1, 1958.
POLAND

Monthly List of European Accession (EEAI) IC, Vol. 8, no. 7, July, 1959.

Uncl.

CA *BRACMAN, M.*

4

- **Manufacture of copper powder by the electrolytic method.**
Marek Bragman *(ibid.* 18, 285-184 (1951)).--A review of
electrolytic methods for the production of Cu powder. 20
references. Edward A. Ackermann
* * * * *

944* (Trends in the Development of the Production of Aluminum by Electrolysis) Kierunki rozwoju produkcji aluminium za pomoca elektrolizy. Marek Dzialan. *Hutnik*, v. 21, no. 7, July 1954, p. 217-224. ~~XXXXXXXXXX~~
Critical review of electrolysis of chlorides or of mixtures of cryolite and Al_2O_3 ; apparatus. Diagrams, graphs. 15 ref. 

BRAPPA, L.

Soviet assistance in the construction and starting of the first
Polish metallurgic plant for aluminum. p. 313

HUENIK vol. 21, no. 10, Oct. 1954

Poland

SO. EAST EUROPEAN ACCESSIONS LIST vol. 5, no. 10 Oct. 1956

7510* (Polish.) Preparing Electrolytic Nickel Powder From
Sulfate and Chloride Solutions. Wytwarzanie elektrolitycznego
proszku niklu z roztworów siarczanów i chlorków. Munk
Bryman, Adam Karas, and Lucja Fajta. 1965. 18 2

The mechanism of Ni powder formation: various electro-
methods that can be used change the nature of the
the electrolyte

18999* (Polish) Production of Nickel Electrolytic Powder
From Sulfate and Chloride Solutions. Produkcja elektrolity-
cznego proszku niklu z roztworów siarczanów i chlorków.
Mieczysław Bratowski, Adam Kanas, and Irena Pódlas-Szpak.
Zestawienie, n. 1558 p. 415-426.

1. Nickel sulfate deposits in powder form, produced by electro-
lysis of nickel sulfate solution. Nickel chloride electrolysis produces
nickel chloride electrolysis solution.

S/061/62/000/022/041/088
B158/B101

AUTHORS: Akerman, Karol, Brafman, Marek, Kruszewska, Olga,
Poczynajko, Andrzej

TITLE: Purification of metals used in semiconductors, and investigation of the anisotropy of distribution of impurities in their single crystals using radioisotopes

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1962, 329, abstract 22K54 (Pierwsze krajowe sympoz. zastosowań izotopów techn., Rogów, 8 - 12 czer., 1960. Warszawa, no. 42, 1961, 1 - 14 [Pol.; summaries in Russ. and Eng.])

TEXT: A procedure for the production of single Si crystals is described as well as an investigation of the effect exerted by orientation of the single crystals, their structural defects, and by the time and direction of diffusion of alloy additives on the anisotropy of distribution of the impurities in the single crystals. [Abstracter's note: Complete translation.] ✓

Card 1/1

S/081/62/000/023/057/120
B160/B186

AUTHORS: Akerman, Karol', Brafman, Marek, Krushevskaya, Ol'ga,
Krushevskiy, Klemens

TITLE: Production of high-purity synthetic silicon dioxide for use
in semiconductor technology

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 457, abstract
23K122 (Rept. Inst. badań jądrow. PAN, no. 294, 1961, 16 pp.,
illustr. [Summaries in Pol. and Ger.])

TEXT: A review is given of known methods of producing high-purity SiO_2 .
 P^{32} and Fe^{59} were used to check experimentally the effectiveness of
purifying SiCl_4 and SiHCl_3 by extraction with inorganic acids (95% H_2SO_4
and 85% H_3PO_4), by complex formation using CH_3CN and $(\text{C}_6\text{H}_5)_3\text{CCl}$, fractional
distillation and absorption on silica gel. The results are the basis of a
suggested flowsheet for producing SiO_2 , which reduces to mixing the initial
silicon tetrachloride with 1.5% of CH_3CN for 3 hours, fractional distilla-

Card 1/2

Production of high-purity synthetic...

S/081/62/000/023/057/120
B160/B186

tion of the mixture obtained, mixing of the intermediate product with 1% of
(C_6H_5)CCl for 3 hours, fractional distillation of the mixture again,
purification in a column filled with silica gel, hydrolysis of the
purified $SiCl_4$, filtration, washing and calcining of the resulting SiO_2 .
31 references. [Abstracter's note: Complete translation.]

Card 2/2

P/046/62/007/010/002/002
D256/D308

AUTHORS: Altman, Karol, Brafman, Marek, Kruszcwska, Olga
and Kruszcwski, Klemens

TITLE: Isotopic investigation of the effectiveness of various methods of purification of SiCl_4 and SiHCl_3 for use in the production of high-purity silicon and silica

PERIODICAL: Nukleonika, v. 7, no. 10, 1962, 635-648

TEXT: The known methods of producing high-purity SiCl_4 and SiHCl_3 are reviewed considering 1) partial hydrolysis; 2) extraction of the impurities with inorganic acids; 3) complexing the impurities with CH_3CN and $(\text{C}_6\text{H}_5)_3\text{CCl}$; 4) fractional distillation; 5) adsorption of impurities on activated silica gel. Effectiveness of the methods was examined by the authors using the following techniques: radioactive tracer analysis employing P^{32} and Fe^{59} , neutron activation of impurities and spectral analysis; the sensitivity of the latter was found to be inadequate. The fractional distillation process.

Card 1/2

Isotopic investigation ...

P/046/62/007/010/002/002
D256/D308

cess stands out as the most effective one; the degree of purity achieved was better than $10^{-5}\%$ by weight, exceeding the sensitivity of the employed β -ray detection system. High-efficiency technological schemes for purification of SiCl_4 and SiHCl_3 are proposed. There are 3 tables and 2 figures.

ASSOCIATION: Instytut Badań Jądrowych P.A.N., Dział Zastosowania Izotopów w Chemii i Technologii Chemicznej, Warsaw
Institute of Nuclear Research, PAS, Department of Isotope Applications in Chemistry and Chemical Technology, Warsaw) ✓

SUBMITTED: June, 1962

Card 2/2

P/014/62/041/010/001/001
D214/D308

AUTHORS: Akerman, Karol, Brafman, Marek, Kruszevska, Olga
and Zmijewska, Wanda

TITLE: The purification of trichlorosilane and silicon
tetrachloride and the preparation of synthetic
quartz glass

PERIODICAL: Przemysł chemiczny, v. 41, no. 10, 1962, 574-577

TEXT: Methods of determining small quantities of impuri-
ties in SiHCl_3 and SiCl_4 were developed to estimate the efficiency
of methods of purification of these compounds. The most efficient
purification was achieved by complexing the impurities with CH_3CN
and $(\text{C}_6\text{H}_5)_3\text{CCl}$ and removing them by fractional distillation. To
estimate the P and Fe contents present as the trichlorides, isotope
tracer techniques were used. Other impurities were determined by
neutron activation of the samples in the EWA reactor and by measure-
ment of their β -absorption and the decay of their β -activity.
The major impurity was found to be Fe ($1.6 \times 10^{-2}\%$). The purity of
Card 1/2

The purification ...

P/014/62/041/010/001/001
D214/D308

SiO₂ and that of quartz glass, obtained from SiCl₄ by a method developed by the authors, was studied by γ -spectroscopy. All γ -emitters of half-life shorter than that of ³¹Si could not be determined by this method. Quartz glass, obtained from high purity SiCl₄, contained only traces of As and Na but up to 10⁻²% Ta, which was introduced into the glass during the vacuum melting of SiO₂. This compares favorably with quartz glass produced outside Poland. Boron cannot be estimated by the above methods but other methods (5 are given) can be employed. The B content in the produced SiO₂ or the subsequent quartz glass was $> 3 \times 10^{-5}\%$. There are 1 figure and 1 table.

ASSOCIATION: Instytut Badań Jądrowych PAN (Institute of Nuclear Research PAS)

SUBMITTED: June 26, 1962

Card .2/2

AKERMAN, Karol; BRAFMAN, Marek, KRUSZEWSKA, Olga; ZMIJEWSKA, Wanda

Purification of trichlorosilane and silicon tetrachloride and
the obtaining of synthetic quartz glass. Przem chem 41 no.10:574-
577 0 '62.

1. Instytut Badan Jadrowych, Polska Akademia Nauk, Warszawa.

S/275/63/000/001/017/035
D413/D308

AUTHORS:

Akerman, Karol, Brafman, Marek, Kruszewska, Olga,
and Poczynajko, Andrzej

TITLE:

The purification of semiconductors and investigation
of anisotropy of impurity distribution in monocrystals
by means of radioactive isotopes

PERIODICAL:

Referativnyy zhurnal, Elektronika i yeye primeneniye,
no. 1, 1963, 7, abstract 1B 46 (Pierwsze krajowe sym-
poz. zastosowań izotopów tech., Rogów, 8-12 czer.,
1960, Warszawa, no. 42, 1961 (Pol.; summaries in Rus.
and Eng.))

TEXT: To obtain pure Si a method was used in which technical Si of
96-98% purity served as the starting material. SiHCl_3 is obtained
from this by treatment with HCl at 300 - 320°C; it is purified by
repeated distillation and then decomposed in an atmosphere of hy-
drogen at 920°C. Single crystals are obtained by drawing from the
melt in vacuo. A radiochemical technique was used for investigat-

Card 1/2

The purification of ...

S/275/63/000/001/017/035
D413/D308

ing irregularities in the distribution of impurities along the length of the crystal, and for studying the process of diffusion of impurities. Various types of defects in the crystals are considered. 7 references. [Abstracter's note: Complete translation.]

Card 2/2

9/275/63/000/003/008/021
A052/A126

AUTHORS: Akerman Karol', ~~Brafman Marek~~, Krushevska Ol'ga,
Krushevski Klemen

TITLE: Production of high-purity synthetic silicon oxide with the
purpose of using it in semiconductor engineering

PERIODICAL: Referativnyy zhurnal, Elektronika i yeye primeneniye, no. 3,
1963, 10, abstract 3B70 (Rept. Inst. badan jadrow. PAN, no.294,
1961, 16 pp, ill.) (Summaries in Polish and German)

TEXT: At first the paper discusses published data relating to SiO₂
production by means of silicon tetrachloride hydrolysis, and the methods of
purifying SiCl₄ and SiHCl₃ from admixtures. Experiments are described in
which radioactive isotopes P³² and Fe⁵⁹ were applied to determining the
effectiveness of individual processes of SiCl₄ and SiHCl₂ purification.
Further, based on experimental data, the authors developed a technological
scheme of multistage process of SiCl₄ purification and of high-purity

Card 1/2

Production of high-purity

S/275/63/000/003/008/021
A052/A126

silicon oxide production for the semiconductor industry, There are 31 references.

B.G.

[Abstracter's note: Complete translation.]

Card 2/2

AKERMAN, Karol; BRAFMAN, Marek; KRUSHEVSKA, Olga (Kruszewska, Olga);
KRUSHEVSKI, Klemens (Kruszewski, Klemens)

Isotopic investigation of the effectiveness of various methods of purifying trichlorosilane and silicium tetrachloride used to obtain silicon and silica of high degree of purity. Nukleonika 7 no.10:635-648 '62..

1. Institut yadernykh issledovaniy PAN, Varshava, Otdel
Primeneniya izotopov v khimii i khimicheskoy tekhnologii.

AKERMAN, Karol; BRAFMAN, Marek; KRUSZEWSKA, Olga; KRUSZEWSKI, Klemens

Isotopic research on the effectiveness of various methods of purifying trichlorosilane and silicon tetrachloride when applied to semiconductor purity silicon and silica. Przegl elektroniki 4 no. 5/6: 299-310 Mj-Je '63.

1. Zaklad Stosowania Izotopow w Chemii i Technologii Chemicznej, Instytut Badan Jadrowych, Polska Akademia Nauk, Warszawa.

AKERMAN, Karol; BRAFMAN, Marek; FIK, Henryk; KITALA, Jan; NOWAK, Maciej;
POCZYNAJLO, Andrzej

Isotopic studies on the separation course of impurities
during the zinc redistillation process. Archiw hutn 8
no. 2: 103-118 '63.

1. Instytut Badan Jadrowych Polskiej Akademii Nauk, Zaklad
XVI, Warszawa (for Akerman, Brafman, Nowak).
2. Biuro Projektow, Zjednoczenie Gorniczo-Hutnicze Metali
Biezelażnych, Gliwice, (for Fik)
3. Zaklady Cynkowe Silesia, Huta Welnowiec (for Kitala).

AKERMAN, Karol; BRAFMAN, Marek; SZTERK, Lucjan; KRUSZEWSKA, Olga

Studies on the structural surface defects of silicon single
crystals from chemical etching and radioactive tracer decoration.
Przegl elektroniki 5 no.7:337-345, 346 J1 '64.

1. Department no.16, Institute of Nuclear Research, Polish
Academy of Sciences.

L 14439-65 EPR/EWP(t)/EWP(b) Ps-4 SSD/AFWL/ESD(^{gs}) JD
ACCESSION NR: AP4045670 P/0046/64/009/07-/0647/0665

AUTHOR: Akerman, K.; Brafman, M.; Hoffman, P. M. (Goffmann, P. M.)

TITLE: Isotopic studies on the behavior of trace admixtures in various chemical and metallurgical technological processes

SOURCE: Nukleonika, v. 9, no. 7-8, 1964, 647-665

TOPIC TAGS: aluminum¹ electrolytic refining⁴, aluminum zone refining, dislocation, detection, germanium recovery, rhodium recovery, tagged atom method, tagged atom method application

ABSTRACT: The method of tagged atoms was successfully applied in studies of some metallurgical and chemical processes, among them the elimination of Cu, Fe, Zn, Na, Ga, Cd, In and Sc during the electrolytic refining of aluminum to a purity of 99.999%; the determination of optimum conditions of zone-refining of aluminum and determination of the purity of the final product; the revealing of dislocation pits on the surface of silicon single crystals; the purification of SiHCl₃ and SiCl₄ used in production of semiconductor-grade silicon and silicon dioxide; and the recovery of germanium from zinc electrolytes and rhodium from molybdenum concentrates. Orig. art. has: 8 figures and 3 tables. ²⁷ ²⁷

Card 1/2

L 11439-65

ACCESSION NR: AP4045670

ASSOCIATION: Institute of Nuclear Research, Warsaw

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 000

OTHER: 025

Card 2/2

POLAND

AKERMAN, Karol; BRAJMAN, Marek; KRUSZEWSKA, Olga; SZTEREK, Lucjan

Nuclear Research Institute (Instytut Badan Jadrowych)

Warsaw, Przeglad elektroniki, No 8, August 1966, pp 376-86

"Revelation of dislocation structural defects in metal and
semiconductor single crystals."

(41)

BRAGA, D.T.

Hosiery

Causes of the appearance of flaws in the ankle
of caprone hose, Leg. prom. 12 No. 4, 1952

Monthly List of Russian Accessions, Library of
Congress, July 1952. Unclassified.

BRAGA, D. T., Eng.; KRYLOV, A. I.; SLUSHAYENKO, E. I.

Knitting Machines

Single-process method of making socks with flat knitting machines. Leg. prom.
12 No. 9, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December ¹⁹⁵²~~1953~~, Uncl.

IGNATOVA, L.P., kand.tekhn.nauk,dots.; BRAGA, D.T., inzh.; VASHCHINSKIY,
L.K., inzh.

Manufacturing nylon socks by a single-process method on cotton
knitting machines without a jacquard apparatus. Izv.vys.ucheb.
zav.; tekhn.prom. no.5:128-139 '59. (MIRA 13:4)

1. Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii trikotazhnogo proizvodstva.
(Hosiery, Nylon) (Knitting machines)

BRAGA, D.T., inzh.

Manufacturing stockings and socks with a single ply welt on
cotton machines. Tekst.prom. 20 no.6:63-64 Je '60.
(MIRA 13:7)

(Hosiery) (Knitting machines)

BRAGA, D.T., assistant; SHOSTAK, A.N., student

Pneumatic motion retarder of thread guide bars. Tekst.prom.
21 no.2:50-51 Ja '61. (MIRA: 14:3)

1. Kiyevskiy tekhnologicheskoy institut legkoy promyshlennosti.
(Knitting machines)

IGNATOVA, L.P., kand.tekhn.nauk, dotsent; BRAGA, D.T., inzh.

Calculations for the manufacture of mesh hosiery on Cotton-type knitting machines. Izv.vys.ucheb.zav.; tekhn.prom. no.2:112-116 '61.
(MIRA 14:5)

1. Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii trikotazhnogo proizvodstva.
(Hosiery)

BRAGA, D.T., starshiy prepodavatel'

Some causes of the stripiness of Cotton machine hosiery. Tekst.
prom. 22 no.11:51-52 N '62. (MIRA 15:11)

1. Kiyevskiy institut legkoy promyshlennosti.
(Hosiery)

BRAGA, G. F.

Subject : USSR/Medicine

AID P - 2460

Card 1/1 Pub. 37 - 7/18

Author : Braga, G. F., Physician

Title : ~~CHERNIGOV REGIONAL DEPARTMENT OF HEALTH~~
Hygienic innovation of the place of work of a milkmaid

Periodical : Gig. i san., 6, 33-38, J^e 1955

Abstract : Describes the results of the survey of over 600 cattle - breeding and dairy farms in the Chernigov Province by district sanitary inspectors, physicians and other medical personnel. The author discusses at length the work of milkmaids in collective farms (kolkhoz) and suggests improvements of hygienic conditions and efficiency, e.g., a movable and adjustable working place for milking cows, and other devices. 5 illus.

Institution: Chernigov Regional Department of Health

Submitted : Feb. 2, 1955

BRAGA, G.F.

Ways of improving medical services for agricultural machinery
operators. Sov.sdrav. 15 no.6:8-14 E-D '55. (MLRA 10:1)

1. Zaveduyushchiy Chernigovskim oblastnym otdelom sdravookhraneniya
(PUBLIC HEALTH
in Russia, med. serv. to agricultural workers)

BRAGA, G.F.

Physiological changes in milkmaids on a two-interval workday at a
dairy farm, Vrach.delo no.8:847-849 Ag '57. (MLRA 10:8)

1. Kafedra gigiyeny turda (zav. - prof. G.Kh.Shakhbazyan) Kiyevskogo
meditsinskogo instituta
(MILKING--HYGIENIC ASPECTS)
(AGRICULTURAL LABORERS--DISEASES AND HYGIENE)

BRAGA, G.F.

Hygienic assessment of illumination of milking areas. Gig. i san.
23 no.6:75-77 Je '58 (MIRA 11:7)

1. Iz Chernigovskogo oblastnogo otdela zdavookhraneniya.
(ILLUMINATION
hyg. assessment of lighting of working areas of
milkmaids (Rus))
(AGRICULTURE,
illumination of milking areas (Rus))

BRAGA, M.

Za kierownica kombajnu. Warszawa, Wydawn. Zwiazkowe CRZZ, 1954. 29 p.
(Behind the wheel of a combine. Tr. from the Russian)

DA Not in DLC

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 6, June 1957, Uncl.

BRAGA, M.A. [Braha, M.A.] dvichi Geroy Sotsialistichnoi Fratsi

Using all strength and knowledge for the welfare of the
beloved people. Makh. sil'. hos. 9 no.4:6 Ap '58.

(MIRA 11:5)

1. Kombayner Bekhters'koi mashinno-traktornoi stantsii Khersons'koi
oblasti.

(Kherson Province--Agricultural machinery)

BRAGA, O., prof. (Bucuresti)

On an excursion with pupils in Moldavia. Natura Biologie 14 no.3:72-
76 My-Je '62.

BRAGA, OLGA
RUMANIA / General Division. Problems of Teaching

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 144

A-7

Author : ~~Braga, Olga~~

Inst : Not Given

Title : For the Removal of the More Frequently Met Faults in the
Teaching of Natural Science in Our Schools

Orig Pub : Natura (Bucuresti), 1954, 6, No 6, 161-170

Abstract : No abstract

Card : 1/1

GUSAK, M.I.; BRAGA, P.P.; BABAYEV, E.A.

Capron fiber for the manufacture of men's summer hats. Leg.prom.
15[i.e. 16] no.6:36-39 Je '56. (MLRA 9:8)
(Ukraine--Hats) (Nylon)

BRAGA P.P.
GUSAK, M.I.; BRAGA, P.P.; LARINA, Ye.A.; YEVGRAFOVA, Ye.G.

Finishing of locknit warp fabric by discharge printing.

Leg.prom. 16 no.10:49-50 0 '56.

(Textile printing)

(MIRA 10:12)

BRAGA, P.P. [Braha, P.P.]; KOTOVA, G.M. [Kotova, H.M.]; STAKOVICHENKO, H.O.
[Stakovychenko, N.O.]

Locknit warp fabric for lace and blouses made with synthetic fibers.
Leh.prom. no.3:23 Je - Ag '62. (MIRA 16:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut pererabotki
iskusstvennogo i sinteticheskogo volokna.
(Synthetic fabrics) (Knit goods)

CONTARENKO, O.M. [Hontarenko, O.M.]; BRAGA, P.P. [Braha, P.P.]

Use of polyacrylonitrile Prelana fibers in the knit goods industry.
Leh. prom. no.3:8-11 J1-S '64.
(MIRA 17:10)

MIRRA, P.P. [Braha, P.P.]

Use of heavy twist yarn in blends with half-woolen yarn in the
manufacture of knit outerwear. Lsh.prom. no. 37-10 Ja-Mr '65.
(MIRA 1814)

CRISTESCU, E.; TITE, G.; OLARU, I.; SZILAGYI, D.; BRAGA, V.; HOARA, M.;
KAZAREL, S.

Our experience with the pneumatic extractor applied in 150 cases.
Rumanian M Rev. no.2:76-80 Ap-Je '60.
(DELIVERY)

MURZA, I.S.; SHEVEL'KO, P.S.; BRAGA, V.G.; ALEKSEYEV, B.A.; GORBACHEV,
F.A.; SUKHANOV, S.S.; NEFEDOV, D.I., inzh.-polkovnik zapasa,
red.; VYZVILKO, S.A., inzh.-kapitan 2 ranga, red.; SOLOMONIK,
R.L., tekhn. red.

[Manual for an aircraft technician] Spravochnik aviatsionnogo
tekhnika. Moskva, Voen. izd-vo M-va obor. BSSR, 1961. 510 p.
(Airplanes) (MIRA 15:3)

BRAGA, V.G., kand.tekhn.nauk, inzhener-podpolkovnik

Horizontal maneuver. Vest. protivovozd.obor. no.4:42-45
Ap '61. (MIRA 14:7)

(Airplanes--Piloting)

BRAGA, V.G., kand.tekhn.nauk, inzhener-podpolkovnik

Vertical maneuver. Vest.protiivovozd.obor. no.3:33-38 Mr '61.

(Fighter planes—Piloting)

(MIRA 14:7)

FS(b) Pc-4/Pq-4 SSD/AEDG(a)/AFWL/AS(mp)-2/AFETR/AFTC(a) JWA/TT/JD/MLK/RM

ACCESSION NR AM4049546

BOOK EXPLOITATION

S/

Murza, I. S.; Shevel'ko, P. S.; Brapa, V. G.; Alekseyev, R. A.; Gorbachev, F. A.;
Sukhanov, S. S.

Handbook for an aircraft technician (Spravochnik aviatsionnogo tekhnika), 2d ed.
rev., Moscow, Voenizdat, 1964, 510 p. illus., index. 35,000 copies printed.

TOPIC TAGS: aircraft structure, aircraft material, aviation fuel, aviation
lubricant, aircraft radio equipment, thermodynamics, gasdynamics, aviation engine

PURPOSE AND COVERAGE: This manual is intended for aircraft technicians with sec-
ondary general or aviation technical education. It can also be useful for flight
mechanics in the Air Force and other aviation specialists. The handbook contains
brief information on the general disciplines -- physics, thermodynamics, gaso-
dynamics, electrical engineering, radio engineering and the special disciplines --
strength of materials, aviation materials, aircraft strength, aerodynamics, avia-
tion engines, aviation fuels and lubricants.

TABLE OF CONTENTS (abridged):

Foreword -- 3
Card 1/2

L 20088-65

ACCESSION NR AM4049546

Foreword to the second edition -- 4
Ch. I. Physics -- 5
Ch. II. Electrical engineering -- 56
Ch. III. Radio engineering -- 74
Ch. IV. Mechanics -- 101
Ch. V. Strength of materials -- 130
Ch. VI. Aviation materials -- 163
Ch. VII. Aerodynamics -- 224
Ch. VIII. Aircraft strength -- 310
Ch. IX. Aviation engines -- 343
Ch. X. Aviation fuels and lubricants -- 414
Ch. XI. General handbook information -- 456

SUB CODE: AC

SUBMITTED: 05Mar64

NR REF SOV: 055

OTHER: 000

Card 2/2

17

Process and Properties Notes

Determination of ferrous oxide in liquid chromium-molybdenum steel. V. T. Hraga. Izv. Vsesoyuz. Nauch. Issled. Inst. Tsvet. Met., No. 7-8, 55-7 (1958); Khim. Referat. Zhur. 3, No. 3, 75 (1958).—A rapid gas method for the detn. of FeO in steel consists in the removal of the gases from the liquid sample by suction under a vacuum. These gases are analyzed for their content of CO and of other gases (CH₄ which is formed from 2CO = C + CO₂). The amt. of CO sepd. according to the reaction FeO + C → CO + Fe (1) multiplied by 7/10 gives the amt. of FeO. This method (Hare, Peterson and Siler, C. A. 31, 7810) was tested on Cr-Mn steels fused in acid elec. furnaces. A comparison of the results with those obtained by the method of Herty (reduction of FeO with metallic Al with the formation of Al₂O₃ followed by its detn.) proved the dependability of the method. The main requirement of the method is as complete as possible reduction of the metal. The sample should be completely liquid during its analysis. The time required for the sample taking is about a min.

W. R. Henn

ASTM-A METALLURGICAL LITERATURE CLASSIFICATION

1950-1959

1960-1969

1970-1979

1980-1989

1990-1999

2000-2009

2010-2019

2020-2029

2030-2039

2040-2049

2050-2059

2060-2069

2070-2079

2080-2089

2090-2099

2100-2109

2110-2119

2120-2129

2130-2139

2140-2149

2150-2159

2160-2169

2170-2179

2180-2189

2190-2199

2200-2209

2210-2219

2220-2229

2230-2239

2240-2249

2250-2259

2260-2269

2270-2279

2280-2289

2290-2299

2300-2309

2310-2319

2320-2329

2330-2339

2340-2349

2350-2359

2360-2369

2370-2379

2380-2389

2390-2399

2400-2409

2410-2419

2420-2429

2430-2439

2440-2449

2450-2459

2460-2469

2470-2479

2480-2489

2490-2499

2500-2509

2510-2519

2520-2529

2530-2539

2540-2549

2550-2559

2560-2569

2570-2579

2580-2589

2590-2599

2600-2609

2610-2619

2620-2629

2630-2639

2640-2649

2650-2659

2660-2669

2670-2679

2680-2689

2690-2699

2700-2709

2710-2719

2720-2729

2730-2739

2740-2749

2750-2759

2760-2769

2770-2779

2780-2789

2790-2799

2800-2809

2810-2819

2820-2829

2830-2839

2840-2849

2850-2859

2860-2869

2870-2879

2880-2889

2890-2899

2900-2909

2910-2919

2920-2929

2930-2939

2940-2949

2950-2959

2960-2969

2970-2979

2980-2989

2990-2999

3000-3009

3010-3019

3020-3029

3030-3039

3040-3049

3050-3059

3060-3069

3070-3079

3080-3089

3090-3099

3100-3109

3110-3119

3120-3129

3130-3139

3140-3149

3150-3159

3160-3169

3170-3179

3180-3189

3190-3199

3200-3209

3210-3219

3220-3229

3230-3239

3240-3249

3250-3259

3260-3269

3270-3279

3280-3289

3290-3299

3300-3309

3310-3319

3320-3329

3330-3339

3340-3349

3350-3359

3360-3369

3370-3379

3380-3389

3390-3399

3400-3409

3410-3419

3420-3429

3430-3439

3440-3449

3450-3459

3460-3469

3470-3479

3480-3489

3490-3499

3500-3509

3510-3519

3520-3529

3530-3539

3540-3549

3550-3559

3560-3569

3570-3579

3580-3589

3590-3599

3600-3609

3610-3619

3620-3629

3630-3639

3640-3649

3650-3659

3660-3669

3670-3679

3680-3689

3690-3699

3700-3709

3710-3719

3720-3729

3730-3739

3740-3749

3750-3759

3760-3769

3770-3779

3780-3789

3790-3799

3800-3809

3810-3819

3820-3829

3830-3839

3840-3849

3850-3859

3860-3869

3870-3879

3880-3889

3890-3899

3900-3909

3910-3919

3920-3929

3930-3939

3940-3949

3950-3959

3960-3969

3970-3979

3980-3989

3990-3999

4000-4009

4010-4019

4020-4029

4030-4039

4040-4049

4050-4059

4060-4069

4070-4079

4080-4089

4090-4099

4100-4109

4110-4119

4120-4129

4130-4139

4140-4149

4150-4159

4160-4169

4170-4179

4180-4189

4190-4199

4200-4209

4210-4219

4220-4229

4230-4239

4240-4249

4250-4259

4260-4269

4270-4279

4280-4289

4290-4299

4300-4309

4310-4319

4320-4329

4330-4339

4340-4349

4350-4359

4360-4369

4370-4379

4380-4389

4390-4399

4400-4409

4410-4419

4420-4429

4430-4439

4440-4449

4450-4459

4460-4469

4470-4479

4480-4489

4490-4499

4500-4509

4510-4519

4520-4529

4530-4539

4540-4549

4550-4559

4560-4569

4570-4579

4580-4589

4590-4599

4600-4609

4610-4619

4620-4629

4630-4639

4640-4649

4650-4659

4660-4669

4670-4679

4680-4689

4690-4699

4700-4709

4710-4719

4720-4729

4730-4739

4740-4749

4750-4759

4760-4769

4770-4779

4780-4789

4790-4799

4800-4809

4810-4819

4820-4829

4830-4839

4840-4849

4850-4859

4860-4869

4870-4879

4880-4889

4890-4899

4900-4909

4910-4919

4920-4929

4930-4939

4940-4949

4950-4959

4960-4969

4970-4979

4980-4989

4990-4999

5000-5009

5010-5019

5020-5029

5030-5039

5040-5049

5050-5059

5060-5069

5070-5079

5080-5089

5090-5099

5100-5109

5110-5119

5120-5129

5130-5139

5140-5149

5150-5159

5160-5169

5170-5179

5180-5189

5190-5199

5200-5209

5210-5219

5220-5229

5230-5239

5240-5249

5250-5259

5260-5269

5270-5279

5280-5289

5290-5299

5300-5309

5310-5319

5320-5329

5330-5339

5340-5349

5350-5359

5360-5369

5370-5379

5380-5389

5390-5399

5400-5409

5410-5419

5420-5429

5430-5439

5440-5449

5450-5459

5460-5469

5470-5479

5480-5489

5490-5499

5500-5509

5510-5519

5520-5529

5530-5539

5540-5549

5550-5559

5560-5569

5570-5579

5580-5589

5590-5599

5600-5609

5610-5619

5620-5629

5630-5639

5640-5649

5650-5659

5660-5669

5670-5679

5680-5689

5690-5699

5700-5709

5710-5719

5720-5729

5730-5739

5740-5749

5750-5759

5760-5769

5770-5779

5780-5789

5790-5799

5800-5809

5810-5819

5820-5829

5830-5839

5840-5849

5850-5859

5860-5869

5870-5879

5880-5889

5890-5899

5900-5909

5910-5919

5920-5929

5930-5939

5940-5949

5950-5959

5960-5969

5970-5979

5980-5989

5990-5999

6000-6009

6010-6019

6020-6029

6030-6039

6040-6049

6050-6059

6060-6069

6070-6079

6080-6089

6090-6099

6100-6109

6110-6119

6120-6129

6130-6139

6140-6149

6150-6159

6160-6169

6170-6179

6180-6189

6190-6199

6200-6209

6210-6219

6220-6229

6230-6239

6240-6249

6250-6259

6260-6269

6270-6279

6280-6289

6290-6299

6300-6309

6310-6319

6320-6329

6330-6339

6340-6349

6350-6359

6360-6369

6370-6379

6380-6389

6390-6399

6400-6409

6410-6419

6420-6429

6430-6439

6440-6449

6450-6459

6460-6469

6470-6479

6480-6489

6490-6499

6500-6509

6510-6519

6520-6529

6530-6539

6540-6549

6550-6559

6560-6569

6570-6579

6580-6589

6590-6599

6600-6609

6610-6619

6620-6629

6630-6639

6640-6649

6650-6659

6660-6669

6670-6679

6680-6689

6690-6699

6700-6709

6710-6719

6720-6729

6730-6739

6740-6749

6750-6759

6760-6769

6770-6779

6780-6789

6790-6799

6800-6809

6810-6819

6820-6829

6830-6839

6840-6849

6850-6859

6860-6869

6870-6879

6880-6889

6890-6899

6900-6909

6910-6919

6920-6929

6930-6939

6940-6949

6950-6959

6960-6969

6970-6979

6980-6989

6990-6999

7000-7009

7010-7019

7020-7029

7030-7039

7040-7049

7050-7059

7060-7069

7070-7079

7080-7089

7090-7099

7100-7109

7110-7119

7120-7129

7130-7139

7140-7149

7150-7159

7160-7169

7170-7179

7180-7189

7190-7199

7200-7209

7210-7219

7220-7229

7230-7239

7240-7249

7250-7259

7260-7269

7270-7279

7280-7289

7290-7299

7300-7309

7310-7319

7320-7329

7330-7339

7340-7349

7350-7359

7360-7369

7370-7379

7380-7389

7390-7399

7400-7409

7410-7419

7420-7429

7430-7439

7440-7449

7450-7459

7460-7469

7470-7479

7480-7489

7490-7499

7500-7509

7510-7519

7520-7529

7530-7539

7540-7549

7550-7559

7560-7569

7570-7579

7580-7589

7590-7599

7600-7609

7610-7619

7620-7629

7630-7639

7640-7649

7650-7659

7660-7669

7670-7679

7680-7689

7690-7699

7700-7709

7710-7719

7720-7729

7730-7739

7740-7749

7750-7759

7760-7769

7770-7779

7780-7789

7790-7799

7800-7809

7810-7819

7820-7829

7830-7839

7840-7849

7850-7859

7860-7869

7870-7879

7880-7889

7890-7899

7900-7909

7910-7919

7920-7929

7930-7939

7940-7949

7950-7959

7960-7969

7970-7979

7980-7989

7990-7999

8000-8009

8010-8019

8020-8029

8030-8039

8040-8049

8050-8059

8060-8069

8070-8079

8080-8089

8090-8099

8100-8109

8110-8119

8120-8129

8130-8139

8140-8149

8150-8159

8160-8169

8170-8179

8180-8189

8190-8199

8200-8209

8210-8219

8220-8229

8230-8239

8240-8249

8250-8259

8260-8269

8270-8279

8280-8289

8290-8299

8300-8309

8310-8319

8320-8329

8330-8339

8340-8349

8350-8359

8360-8369

8370-8379

8380-8389

8390-8399

8400-8409

8410-8419

8420-8429

8430-8439

8440-8449

8450-8459

8460-8469

8470-8479

8480-8489

8490-8499

8500-8509

8510-8519

8520-8529

8530-8539

8540-8549

8550-8559

8560-8569

8570-8579

8580-8589

8590-8599

8600-8609

8610-8619

8620-8629

8630-8639

8640-8649

8650-8659

8660-8669

8670-8679

8680-8689

8690-8699

8700-8709

8710-8719

8720-8729

8730-8739

8740-8749

8750-8759

8760-8769

8770-8779

8780-8789

8790-8799

8800-8809

8810-8819

8820-8829

8830-8839

8840-8849

8850-8859

8860-8869

8870-8879

8880-8889

8890-8899

8900-8909

8910-8919

8920-8929

8930-8939

8940-8949

8950-8959

8960-8969

8970-8979

8980-8989

8990-8999

9000-9009

9010-9019

9020-9029

9030-9039

9040-9049

9050-9059

9060-9069

9070-9079

9080-9089

9090-9099

9100-9109

9110-9119

9120-9129

9130-9139

9140-9149

9150-9159

9160-9169

9170-9179

9180-9189

9190-9199

9200-9209

9210-9219

9220-9229

9230-9239

9240-9249

9250-9259

9260-9269

9270-9279

9280-9289

9290-9299

9300-9309

9310-9319

9320-9329

9330-9339

9340-9349

9350-9359

9360-9369

9370-9379

9380-9389

9390-9399

9400-9409

9410-9419

9420-9429

9430-9439

9440-9449

9450-9459

9460-9469

9470-9479

9480-9489

9490-9499

9500-9509

9510-9519

9520-9529

9530-9539

9540-9549

9550-9559

9560-9569

9570-9579

9580-9589

9590-9599

9600-9609

9610-9619

9620-9629

9630-9639

9640-9649

9650-9659

9660-9669

9670-9679

9680-9689

9690-9699

9700-9709

9710-9719

9720-9729

9730-9739

9740-9749

9750-9759

9760-9769

9770-9779

9780-9789

9790-9799

9800-9809

9810-9819

9820-9829

9830-9839

9840-9849